◆ *PIN ASSIGNMENTS:*

Parallel 25 Pin female connector (P1):					
Pin	Signal	Pin	Signal	Pin	Signal
1	STROBE	10	ACKNOWLEDGE	19	GROUND
2	DATA 0	11	BUSY	20	GROUND
3	DATA 1	12	PAPER EMPTY	21	GROUND
4	DATA 2	13	SELECT	22	GROUND
5	DATA 3	14	AUTO FEED	23	GROUND
6	DATA 4	15	ERROR	24	GROUND
7	DATA 5	16	INIT	25	GROUND
8	DATA 6	17	SELECT INPUT	26	GROUND
9	DATA 7	18	GROUND		

Serial 9 Pin male connector (S1):							
Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	CD	4	DTR	6	DSR	8	CTS
2	RD	5	GROUND	7	RTS	9	RI
3	TD						

Serial 25 Pin male connector (S2):					
Pin	Signal	Pin	Signal	Pin	Signal
1	NC	10	NC	19	NC
2	TD	11	NC	20	DTR
3	RD	12	NC	21	NC
4	RTS	13	NC	22	RI
5	CTS	14	NC	23	NC
6	DSR	15	NC	24	NC
7	GND	16	NC	25	NC
8	CD	17	NC		
9	NC	18	NC		
** NC = Not connect					

◆ *TECHNICAL SPECIFICATION:*

Compatibility:	-PCI 32Bit card for 486/586/Pentium/Pentium
Operating system:	-DOS, WINDOWS 95
Chips: Parallel chip	-1 x 16 FIFO 16C552 Serial and
Connections: connector serial	-1 x 9 and 25 Pin D-SUB male
connector parallel	-1 x 25 Pin D-SUB female
PCB:	- 2 Layer / 120 x 82 mm

Radio Frequency Interference

The Federal Communications Commission Radio Interference Statement includes this warning:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of these measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The user should not modify or change this device without written approval from U.S. Offshore Co., Ltd. Modification could void authority to use this equipment.

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Chapter 1

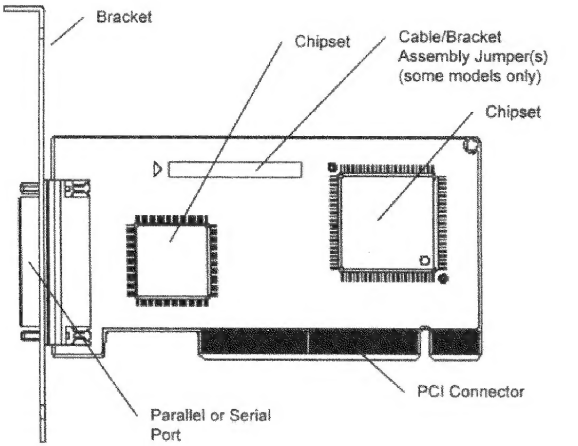
INTRODUCTION

Congratulations on purchasing your PCI I/O (Input/Output) Card. This User's Guide is written to provide an easy-to-read yet thorough reference for using and installing your PCI I/O Card. Detailed driver installation information can be obtained from the product's CD driver disk. Before installing device drivers, browse the CD to familiarize yourself with its contents.

General Layout

Before continuing, please take a moment to familiarize yourself with your new PCI I/O Card. The design of each card varies slightly from the diagram below, but the essential design elements remain the same.

Figure: General PCI I/O Card Layout



Chapter 2

BEFORE YOU GET STARTED

Unpacking the PCI I/O Card

Open the product's package and inspect the contents. If any of the items listed below are damaged or missing, please contact your dealer:

1. Your PCI I/O Card
2. This User's Guide
3. Driver CD-ROM Disk
4. A Cable/Bracket Assembly
   (for some models only)
5. External Parallel or Serial Splitter Cable
   (for some models only)

Other Items Needed

In addition to the contents of the package, you may need one or more of the following:

1. Your computer's documentation
2. Your operating system's documentation
3. The documentation of the peripheral that will be connected to your PCI I/O Card
4. A small to medium sized Phillips and/or flathead screwdriver
5. A small container for storing screws and other small parts

Safety Recommendations

When installing your PCI I/O Card, do the following to avoid possible electric shock and damage to your system:

1. Turn off all power to your computer.

2. Unplug all cables connected to your computer, including the power cord.
3. Ground yourself by touching a metallic object before handling the card and before installing the card.

Serial Number

Locate the product's serial number (usually on the back of the card), and record the number below. If the product does not have its original serial number attached, your warranty may be voided.

Serial Number (S/N): _____

System Requirements

- 75MHz or Higher CPU (recommended)
- Plug-&-Play Compliant BIOS
- 32MB of RAM
- Windows 95, Windows 98 or Windows NT

Driver Support

Your PCI I/O Card comes with a comprehensive Driver CD-ROM Disk which supports the following popular systems:

- Windows 95
- Windows 98
- Windows NT

For additional driver information, consult the appropriate directory for your operating system on your Driver CD-ROM Disk.

NOTE: Driver information is subject to change. Check with your dealer for updated driver information.

Chapter 3

HARDWARE INSTALLATION

Because the design of computer cases varies greatly, only general installation instructions are given. Please refer to your computer's reference manual whenever in doubt.

Configuration

Because your PCI I/O Card is Plug & Play ready, you need not worry about setting I/O addresses and IRQs. All this will be handled for you automatically through Plug & Play functionality.

Cable/Bracket Assembly Installation

If you purchased an I/O card, which has a Cable/Bracket Assembly for parallel or serial ports, before installation, you will need to first attach this to your PCI I/O Card. There is only one way to correctly attach the Cable/Bracket Assembly to your PCI I/O Card. To do so, follow the instructions below:

1. Locate the Cable/Bracket Assembly Jumper(s) on the I/O card (refer to the "General PCI I/O Card Layout" figure in chapter 1). Locate the attachment pins that the Cable/Bracket Assembly will be connected to.
2. Take the ribbon cable(s) of the Cable/Bracket Assembly and insert the cable's connector onto the I/O card's Cable/Bracket Jumper pins. It is important that the side of each ribbon cable with a red line be aligned with the side of the jumper with the white arrow (the side closest to the bracket).

PCI I/O Card Installation

Follow the instructions below to install your PCI I/O Card.

1. Turn off the power to your computer and any other connected peripherals.
2. Before installing your PCI I/O Card, you should wear a wrist-grounding strap. If a wrist-grounding strap is not available, ground yourself by briefly touching an unpainted piece of metal.
3. Remove the mounting screws located at the rear and/or side panels of your computer and gently slide the cover off.

> **CAUTION:** Your PCI I/O Card must be installed in a PCI expansion slot. Please be sure that you have such a slot available before installing the card. Plugging the card into either a 16 or 8 bit ISA slot will damage both the card and your computer.

4. Locate an available PCI expansion slot and remove its cover from the rear panel of your computer.
5. Align the card with the expansion slot then, gently but firmly, insert the card. Make sure the card is seated snugly and oriented correctly.
6. Fasten the card to your computer's case using the screws you removed in Step 4.
7. Gently replace both your computer's cover and the appropriate mounting screws.
8. You are now ready to power-up your system and install any appropriate software.

Chapter 4

SOFTWARE INSTALLATION

This chapter presents general software installation instructions for the following popular systems: Windows 95, Windows 98 and Windows NT.

Your PCI I/O Card automatically configures with Windows Plug & Play functionality. This means that once you plug the card into a computer, Windows will automatically detect the card and launch an installation wizard.

The appropriate driver is located at the following path on your Driver CD-ROM Disk: D:\PCI\ (where "D:" is your designated CD-ROM drive).

> **NOTE:** Before installing any software please insure that all hardware is properly configured and installed according to the Hardware Installation section of chapter 3.

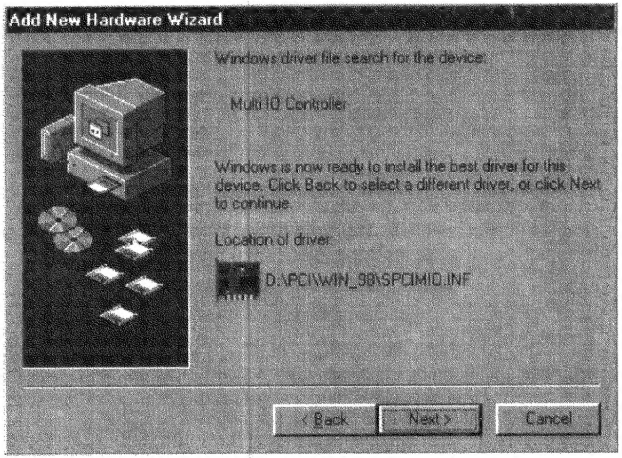
Windows 95 and Windows 98

Follow the instructions below to install your PCI I/O Card driver under Windows 95 and Windows 98.

1. When you are sure that your PCI I/O Card is properly installed, start Windows.
2. After Windows starts up, it will automatically detect your newly installed PCI I/O Card and launch an **Add New Hardware Wizard** (**Update Device Driver Wizard** in Windows 95). Click *Next>*. (If your system fails to detect your PCI I/O Card, click your Windows **Start** button, select *Settings,* then click on *Control Panel*. A **Control Panel** window will appear. Double click the *Add New Hardware* icon).
3. In Windows 98 the installation wizard will ask you what you want it to do. Click the "Search for the best driver

for your device. (Recommended)" radio dial. Then click *Next>*. In Windows 95 click the *Other Locations* button.

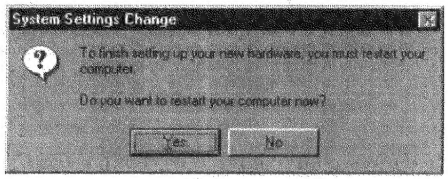
4. At the next screen, insert your PCI I/O Card Driver CD-ROM Disk. Then click the *Browse* button.
5. A **Browse for Folder** window will appear. Double click your designated CD-ROM drive letter (usually drive D:).
6. Double click the "PCI" folder, then double click the folder that corresponds with your operating system (e.g., "*Win_95*" for Windows 95 or "*Win_98*" for Windows 98). Then click *OK*.
7. You will be returned to the previous screen. The location should read your device driver's path (e.g., D:\PCI\Win_95). Click *Next>/OK*.


Add New Hardware Wizard
Windows driver file search for the device:
Multi IO Controller
Windows is now ready to install the best driver for this device. Click Back to select a different driver, or click Next to continue.
Location of driver:
D:\PCI\WIN_98\SPCIMIO.INF
< Back
Next >
Cancel

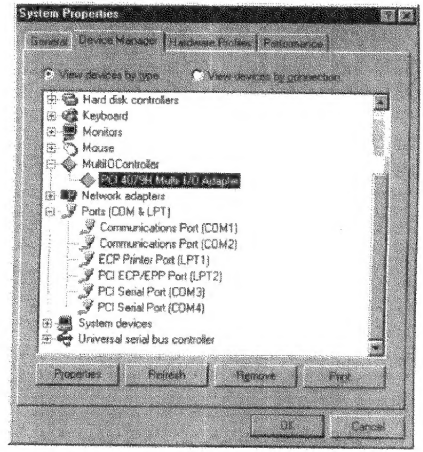
8. Windows will notify you that it will search for your device. Click *Next>*. (In Windows 95 it will report that it found the driver. Click *Finish*.)

9. An **Insert Disk** window may appear. Click *OK*. From the **Copying Files** window, click the *Browse* button. From the **Open** window under *Drives*, change the drop-down box to your designated CD drive letter (Usually D:). A list of folders will appear under *Folders*. Double click on the PCI folder, then click on the folder that corresponds with your operating system (e.g., Win_95). Under *File name* the file "*comdrv.vxd*" will be highlighted (If not, make sure you opened the correct folder.). Click *OK*. You will be returned to the **Copying Files** screen. Under "Copy files from:" your device driver's location should be displayed (e.g., D:\PCI\Win_95). Click *OK*.
10. If your card has more than one port, Windows will detect each port and automatically install the additional ports (In some instances Windows may launch an additional **Add New Hardware Wizard** for each port. In this case, repeat the steps above to install the other ports).
11. Then you will be notified that the installation process has been completed. Click *Finish*.
12. A window should appear asking you if you want to re-start your computer. After installing new hardware, it's always a good idea to restart your computer. Click *Yes*.

NOTE: If you install additional ports into your system, you may be requested to restart your computer when you finish setting up each port. Click *Yes* to restart your computer only if all serial and parallel ports have been installed. If not, click *No*. For example, if you install two ports in your system, click *No* when asked to restart your computer after the first System Setting Change and click *Yes* to restart your computer after the last System Setting Change.


System Settings Change
To finish setting up your new hardware, you must restart your computer.
Do you want to restart your computer now?
Yes
No

13. To test that your card was installed properly, click on your Windows **Start** button. Click *Settings* and then click the *Control Panel.*
14. A **Control Panel** window will open. Double click the System icon.
15. A **System Properties** window will appear. From the *Device Manager* tab, find the *MultiIOController* icon and double click it.
16. Underneath *MultiIOController* your newly installed PCI I/O Card (PCI xxxxx Multi- I/O Adapter) will be listed. Double click the icon.
17. A **Properties** window will appear. Under *Device status* it should read "This device is working properly."
18. To check the I/O card's IRQ address, click the *Resources* tab. Under "Resource type" your card's assigned IRQ address will be listed.
19. To check each individual port on the card, from the *Device Manager* tab in the **System Properties** window, go to *Ports (COM & LPT)* and double click the icon. A listing of COM and LPT ports will appear. Double click the appropriate port or click once on the icon and click the *Properties* button. A **Properties** window will appear. Under *Device status* it should read "This device is working properly."



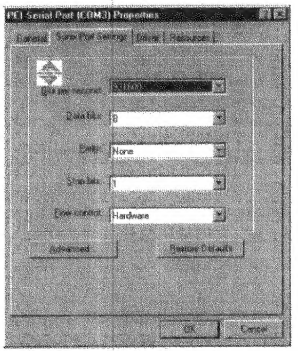
Configuring Your COM Port

If you'd like to make changes to your PCI I/O Card's configuration, follow the steps below. Default values are pre-set by the computer. Only experienced users should attempt to make changes to the default settings.

> **Warning:** Tampering with your default values could render your computer inoperable. Before attempting to adjust your default settings, make a note of the original default values. If your changes render your computer inoperable, restore the original default values.

1. Click on your Windows **Start** button. Click *Settings* and then click *Control Panel.*
2. A **Control Panel** window will open. Double click the System icon.

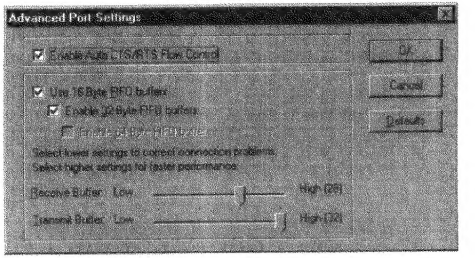
3. A **System Properties** window will appear. From the *Device Manager* tab, find the *MultiIOController* icon and double click it.
4. Underneath *MultiIOController* your newly installed PCI I/O Card (PCI xxxxx Multi- I/O Adapter) will be listed. Double click the icon.
5. A **Properties** window will appear. Click the *Port Settings* tab.
6. From the *Port Settings* tab, use the drop down boxes to configure the *Bits per second*, *Data bits*, *Parity*, *Stop bits* and *Flow control* if you want to make changes from the default values.



There are three kinds of flow controls: Xon/Xoff, Hardware and None. "Xon/Xoff" refers to software protocol control. "Hardware" refers to RTS/CTS control, but RTS/CTS is actually controlled by software. "None" means there is no defined flow control.

7. Click the *Advanced* button if you want to set more advanced features.

8. An **Advanced Port Settings** window will appear. From this window you can enable the Auto CTS/RTS Flow Control, configure the FIFO buffer, and configure the Receive/Transmit Buffer level if you want to further customize the port.



Enable Auto CTS/RTS Flow Control

Enable Auto CTS/RTS Flow Control means the CTS/RTS flow control is controlled by hardware automatically. Your System will be more stable if this function is enabled.

16 Byte FIFO Buffers

If your card supports a 32-byte FIFO, you can use either a 16 or a 32-byte FIFO. If your card supports a 64-byte FIFO, you can select 64, 32 or 16-byte FIFO. The default value is a 16-byte FIFO. If your card cannot support a 32/64-byte FIFO, the Enable 32/64 Byte FIFO buffer will be highlighted in gray.

Receive Buffer/Transmit Buffer

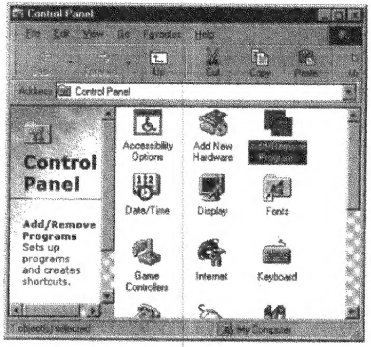
Setting the Receive/Transmit Buffer to a higher value will provide faster performance because the interrupts will be reduced, and the time for the interrupt service routine will be lessened. A receive buffer overflow will occur if the CPU

speed is too slow to handle the overflow. If the system is not stable, select the lower value to correct the problem.

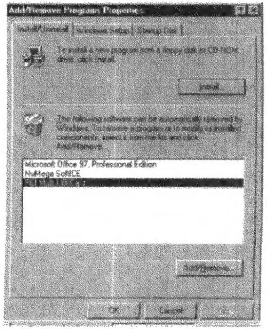
Uninstalling Your PCI I/O Card Drivers in Windows 95/98

Follow the instructions below to uninstall your PCI I/O Card in Windows 98 and Windows 95.

1. Click your Windows **Start** button. Go to *Settings* and then *Control Panel*.
2. From the **Control Panel** window, double click the *Add/Remove Programs* icon.



3. An **Add/Remove Programs Properties** window will appear. Select *PCI Multi-I/O Card*. Then click the **Add/Remove** button.



4. A **Confirm** window will appear. Click *Yes* to remove the *PCI Multi-I/O Card* driver.
5. Windows will ask you if you want to restart your computer. After removing drivers, it's always a good idea to restart your computer. Click *Yes* to restart.

Windows NT 4.0 Driver Installation Guide

To install your PCI I/O Card under Windows NT 4.0, follow the instructions below.

1. When you are sure that your PCI I/O Card is properly installed, start Windows NT.
2. After Windows NT starts up, insert your PCI I/O Card Driver CD into your CD-ROM drive.
3. Click on your Windows **Start** button. Go to *Programs* and then *Windows Explorer*.
4. From **Windows Explorer** under *All Folders*, click on your CD-ROM drive letter (Usually Drive letter D:).
5. Double click the "PCI" folder, then double click the "WIN_NT" folder. A list of items in your PCI I/O Card Driver disk will appear on the right. Double click the *Setup.exe* icon.